Public Disclosure Authorized

Report Number: ICRR0021976

1. Project Data

Project ID P123923 Country Russian Federation	FORES Practic	Project Name FOREST FIRE RESPONSE Practice Area(Lead) Environment, Natural Resources & the Blue Economy		
L/C/TF Number(s) IBRD-81970	Closing Date (Original) 31-Jan-2018		Total Project Cost (USD) 14,255,428.14	
Bank Approval Date 20-Sep-2012	Closing Date (Actual) 31-Mar-2019 IBRD/IDA (USD) Grants (US			
	IBRU/IL	MA (USD)	Grants (USD)	
Original Commitment	40,000,000.00		0.00	
Revised Commitment	16,243,620.70		0.00	
Actual	14,255,428.14		0.00	
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2. Project Objectives and Components

a. Objectives

According to the Project Appraisal Document (PAD) (p. 6) and the Financing Agreement of July 8, 2013 (p. 6) the objective of the project was "to improve forest fire prevention and suppression in select forest ecosystems, including targeted Protected Areas (PAs), and to enhance forest management in pilot regions."

b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?
No

d. Components

The project included three components:

Component 1: Enhancing Forest Fire Prevention, Management and Control (appraisal estimate US\$73.37 million, actual US\$18.9 million due to the cancellation of project financing): This component consisted of three sub-components:

Sub-Component 1A: Enhancing Forest Fire Prevention, Management, and Control in Russia's Extensive Forest Fund: This sub-component was to finance the strengthening of fire detection in five selected pilot regions through the development of fire preparedness and management plans, upgrading of the fire danger rating and hazard index system, and piloting of early fire detection systems. To improve ground-based forest fire response and ensure full coverage in these regions, fire stations were to be rehabilitated, local forest fire brigades were to be established, and firefighting and communications equipment were to be provided.

The five pilot regions were selected based on their (i) forest fire incidence and natural fire danger in the region; (ii) sufficiently abundant forest cover; (iii) territorial diversity in the Russian Federation; and (iv) financial and administrative capacity for implementation.

Sub-Component 1B: Enhancing Forest Fire Prevention, Management, and Control in Russia's Protected Areas (PAs): This sub-component was to reduce the impact of forest fires in targeted Protected Areas, and hence on biodiversity and conservation, through following a similar approach to sub-component 1.A, by improving detection, response, management and coordination of fire-fighting efforts. Early fire detection and response was to be strengthened by upgrading the fire danger rating and hazard index system and upgrading firefighting systems and machinery (e.g., restoration of forest fire stations, upgrading of communications systems, and the supply of suitable firefighting machinery, equipment, protective clothing, gear and hand tools) in the Protected Areas. In addition, public awareness programs and media campaigns were to be conducted to decrease the incidence of forest fires of human origin.

<u>Sub-component 1.C Preparation of Follow-up Operation:</u> This sub-component was to support the preparation of related follow-up operations as required.

Component 2: Building Forestry and Protected Areas (PA) Management Capacity (appraisal estimate US\$44.39 million, actual US\$8.58 million due to the cancellation of project financing): This component included three sub-components:

Sub-component 2.A Building Forestry Management Capacity in Russia's Extensive Forest Fund: This component was to provide technical assistance to support the institutional framework, by identifying and addressing key policy and legislative issues, undertake economic cost benefit analysis (including the improving of the recording of the causes of the fires) as well as voluntary certification; targeted investments to improve forest regeneration and restoration; the development of an integrated forest management

information system (FMIS); the development of model forests; and training of forest administration and management specialists.

<u>Sub-component 2.B Building Management Capacity in PAs:</u> This component was to finance PA management to reduce fire risk and enhance fire prevention, through improved planning and institutional arrangements; developing guidelines on fire safety, fire preparedness planning and wildfire damage assessment; developing a Forest Management Information System (FMIS) for PAs; and human resource capacity building.

<u>Sub-component 2.C Preparation of Follow-up Operation:</u> This sub-component was to provide the preparation of related follow-up operations as required.

Component 3: Project Management (appraisal estimate US\$3.49 million, actual US\$2.32 million): This component was to finance the operating costs of a Project Implementation Unit (PIU), which was to undertake project management functions for both components 1 and 2. The PIU was to provide support to the core implementing agencies, the Federal Forest Agency (FFA) and the Ministry of Natural Resources and Environment (MNRE) in project management, including procurement, financial management, project coordination, reporting, and monitoring.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates
Project Cost: The project was estimated to cost US\$121.26 million. Actual cost was US\$33.03 million.

Financing: The project was to be financed by a US\$40 million loan by the International Bank for Reconstruction and Development (IBRD) of which US\$14.25 million disbursed. Reason was for the low disbursement was the reduction of investments by 33 percent in the pilot regions due to dropping planned activities. **Also, several activities were not fully implemented.**

Borrower Contribution: The Borrower was to contribute US\$81.26 million. Actual contribution was US\$18.77 million.

Dates: The project was restructured twice:

• On December 15, 2016 the project was restructured to: reduce the investments in the pilot regions while increasing the number of participating protected areas from 12 to 25. This change resulted in the) modification of indicators such as dropping two and adding baselines and targets; ii) extending the project's closing date to December 31, 2019 to allow more time for implementation due to delays under Part A, mainly owing to the extension of the scope from 12 to 25 PAs; and iii) reducing the financing by 33 percent from US\$121.26 million to US\$81.25 million to reduce the size of Part A and scale up Part B to cover 25 PAs. The total amount cancelled from the Borrower's contribution was US\$ 40.01 million; iv) to reduce activities in Part A to: the upgrading fire-fighting systems, and equipment, developing fire prevention plans, improving fire prediction and early detection systems and improving forest pathology monitoring and management through improving forest regeneration capacity; and v) move implementation responsibility from FFA to MNRE.

• On March 15, 2019 the project was restructured to change the loan closing date from December 31, 2019 to March 31, 2019.

3. Relevance of Objectives

Rationale

According to the PAD (p. 1) at the time of project appraisal Russia's forest represented 20 percent of the world's forests and accounted for 15 percent of the world's growing stock. However, between 2000 and 2010 the country experienced on average 24,000 forest fires annually covering 1.4 million hectares of forest (0.2 percent of total closed forest in Russia). The ICR (p. 6) stated that in 2009, the total carbon emissions from fire disturbed Russian forests were estimated at 50 to 231 million tons of carbon per year, making it a matter of global concern. During the summer 2010, Russia recorded 33,500 fires (50 percent more than in 2009) covering 2.3 million hectares and resulting in carbon emissions of 150 million tones rising into the atmosphere and causing a 3,000-kilometer-long cloud. In Moscow City, air samples were 6.6 times the normal levels of carbon monoxide.

According to the ICR (p. 14) the project's objective supported the government's Federal Program on Forests (2013-2020) which aims to reduce the damage caused by forest fires and increase the effectiveness of forest fires prevention and suppression. Also, the project's objective was in line with the Bank's most recent Country Partnership Strategy (2012-2016) and the project's forest fire management activities were to contribute to sustainable development and effective protection of the environment under the CPS' strategic theme "increasing growth and diversification" by aiming to improve sustainable management of forest resources. Also, the project's objective supported the CPS' strategic theme "deepening Russia's global and regional role" by aiming to reduce the country's carbon emissions. The project's objective continued to be relevant under the Bank's most recent Systematic Country Diagnostic which stresses the importance of Russia's forest for the global climate change agenda. Also, it states that better management of land, forests, and water would positively impact the management of climate change and disaster risks which would especially benefit the poor and natural resource-dependent populations with limited coping mechanisms.

The relevance of objective rating is High.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To improve forest fire prevention and suppression in select forest ecosystems, including targeted PAs: According to the Bank team (January 24, 2020) not all targets were identified for these outputs since no baselines were available.

Rationale

The project's theory of change linked outputs such as improving ground-based forest fire response, strengthening of early fire detection and response, supporting prompt response and cross-deployment, upgrading of firefighting systems and machinery, ensuring coverage of all five regions and strengthening communications with the outcome of improving forest fire prevention and suppression in select forest ecosystems, including targeted protected areas. Also, the project's theory of change linked outputs such as reversing of incentives for illegal logging and setting of forest fires, modifying silvicultural practices to reduce fuel load and area of pest damaged trees, improving forest regeneration and efficiency of forest management, developing analysis and fire record system, establishing a sustainable system and institutions for forest fire management with the outcome of a clear distribution of functions and responsibilities and improving technical and human capacity with enhancing forest management in pilot regions.

Outputs:

- Community systems for increased mobility and early suppression of forest fires were delivered to Syktyvkar (188 units), Khabarovsk (515 units), Moscow (1,137 units), and Voronezh (306 units) regions.
- Integrated information and telecommunication vehicle mounted mobile systems were delivered to Krasnoyarsk (three vehicles), Khabarovsk (two vehicles), Moscow (one vehicle), and Voronezh (one vehicle) regions.
- Early fire detection systems were procured and tested: video camera computer systems were installed for monitoring forest fires in Krasnoyarsk (130 units), Khabarovsk (30 units), and Voronezh (20 units) region.
- Six-wheel drive incident command centers were provided. The command centers were to be used for managing the fire-fighting of large-scale fire events in remote areas.
- 13 PAs fire brigades were quipped and trained, achieving the original target of 13 PAs but not achieving the revised target of 25 PAs.

Outcomes:

- The percentage of fires contained within 24 hours following detection in pilot region extensive forest increased from 73.9 percent in 2011 to 75 percent in 2019, not achieving the original target of 84.8 percent or the revised target of 76.5 percent.
- The percentage of fires contained within 24 hours following detection in protected PAs increased from 72 percent in 2011 to 84.44 percent in 2019, not achieving the original target of 90 percent or the revised target of 87 percent.
- The average areas of fires at detection in projected PAs decreased from 14 hectares in 2015 to 4.92 hectares in 2019, not achieving the original target of 2 hectares but achieving the revised target of 5 hectares.

 The project did not have any data on the area which was covered by improved Forest Pest Monitoring System in pilot regions. Therefore, it is not possible to assess if the target of 190 million hectares or the revised target of 10 million hectares was achieved.

Rating Negligible

OBJECTIVE 2

Objective

Enhance forest management in pilot regions:

Rationale

Outputs:

- Planned technical assistance activities were only partially or not implemented as planned. These activities included "Development of a National Forest Fire Management Strategy for federal PAs" (not achieving the target of the new strategy being implemented), "Economic Analysis of the Part B Project Investments" (not fully implemented as planned), "Upgrade of the System for Definition of Fire Safety Stages: Implementation of the new system to measure risk of forest fires in selected PAs" (not implemented as planned), "Development programs of the restoration of disturbed landscapes in pilot PAs" (not implemented as planned), "Development of projects firefighting equipment in the GIS environment with a focus on biodiversity conservation in selected PAs" (was not implemented).
- A report, "develop fire prevention plans for the largest and most fire-susceptible PAs" was produced and accepted by the MNRE.

Outcomes:

• Two PAs were covered by fire management planning and implementation to protect biodiversity habitat, not achieving the original target of 13 PAs or the revised target of 6 PAs.

Rating Negligible

OVERALL EFFICACY

Rationale

The achievement of both objectives was Negligible due to low achievement.

Overall Efficacy Rating Negligible

Primary Reason Low achievement

5. Efficiency

Economic efficiency:

The PAD (p. 12) conducted a cost-benefit analysis and defined the project's most direct benefits as the following: i) reduced losses of standing timber; ii) reduced losses of Non-Timber Forest Product (NTFP) production; iii) reduced area of forest affected by pests and pathogens; iv) reduced damage from fires that spread from forest to other landscapes; v) reduced number of fire related deaths, injuries and health problems; vi) improved forest regeneration and maintenance; vii) improved forest management and governance; viii) reduced losses associated with the indirect benefits of forest cover; and ix) reduced amounts of carbon entering the atmosphere as a result of fire, and increased amounts of carbon captured through improved silviculture and better growth of forests. The analysis applied the investments costs of sub-component 1 A as costs and used a discount rate of 12 percent. An Economic Internal Rate of Return (ERR) of 23 percent and a Net Present Value (NPV) of more than US\$50.5 million were estimated.

At the Mid-Term Review the analysis was revised and the investment costs of Part B were used. Also, the list of direct and indirect benefits was expanded covering 12 PAs of Part B (not 25 PAs). The analysis did not cover Part A pilot regions of the Extensive Forest Fund. An EIRR of 36 percent and an NPV of US\$9.7 million was estimated.

At project completion the investment costs of Part A and Part B were taken into account and data such as stumpage price increase was updated. The analysis estimated local and global benefits. Local benefits were identified, for, example, such as reduced timber loss. Global benefits were identified as, for example, reduced carbon emissions. The EIRR was 42 percent and the NPV was more than US\$150 million. For local benefits only, the EIRR was 23 percent and the NPV was US\$21 million.

On balance, the economic analysis indicates Substantial efficiency.

Operational efficiency:

The project experienced several implementation challenges such as leadership challenges at the FFA, ineffective process of developing procurement packages and delivery of goods and services resulting in significant delays. Also, there were six significant contractual dispute cases that resulted in court cases. Finally, the project's closing date had to be extended twice for a total of 15 months.

Given these operational inefficiencies, the project's overall efficiency rating is Modest.

Efficiency Rating

Modest

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	23.00	77.40 □ Not Applicable
ICR Estimate	✓	23.00	92.80 □ Not Applicable

^{*} Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The project's Relevance of Objective was rated High, Efficacy was rated Negligible and Efficiency was rated Modest. Taking everything together, the project's overall outcome rating is Unsatisfactory.

a. Outcome Rating
Unsatisfactory

7. Risk to Development Outcome

The main risk to development outcome falls under the political category and is Substantial.

According to the Bank team (January 24, 2020), the government at the highest level (Prime Minister and Minister) is committed to the objective of the project, especially after the recent forest fires in the summer of 2019. However, the Bank team stated that it is uncertain how effectively this commitment will translate into the required capacity on the ground, outreach to the communities and land users. This has also been demonstrated during project implementation when the project was not able to develop a sustainable system, institutions, and policy for forest fire management with clearly defined responsibilities and functions. According to the ICR (p. 29) this might negatively affect the sustainability of the limited project outcomes achieved. It will be critical to address the perverse incentives which are encouraging deliberately burning forest to obtain access to salvage logging permits or to conceal illegal harvesting.

8. Assessment of Bank Performance

a. Quality-at-Entry

According to the ICR (p. 22) the project built on previous analytical, policy, and institutional work in the forest sector by the government and the Bank. The Bank conducted brief assessments of the Borrower

and the capacity of the Implementing Agencies and took lessons learned from past Bank operations into account. These lessons were related to just-in-time policy advice, key PDO indicators, and procurement specifications for firefighting equipment. Also, outcomes of stakeholder consultations were incorporated into the project's design. The ICR stated (p. 22) that five pilot regions and 12 PAs were selected based on their representation and substantial contribution to the country's annual dynamic forest fires. The ICR (p. 28) stated that the Bank team consisted of specialists with the necessary skills such as forestry, forest fires, social and regional sectors, natural resource economists, and Financial Management, Procurement and Legal.

According to the PAD (p. 12) the Bank team identified two key risks. First, the risk that the operation involved numerous institutions (FFA, MNRE, and the pilot regions) which were not used to working together to prevent and respond to forest fires and hindering effective suppression. The Bank aimed to address this risk directly in the project's design, which developed a protocol to support agency coordination and physical coordination centers (IFFCs) to ensure coordinated forest fire response and provide additional resources to surrounding areas, as needed. However, these mitigation measures were not adequate, and the project suffered from weak oversight and the Interagency Committees not being able to settle the controversies encountered. The degree to which this could have been foreseen is difficult to calculate.

Second, the risk of delays for the planned reforms of the policy and institutional framework for forest and forest fire management which could result in continuing perverse incentives in the forest sector leading to unlawful activities, including the willful setting of fires. The Bank tried to mitigate this risk by timely developing the policy framework and institutional capacities, which was to result in a reduction in incentives for illegal activities. However, according to the ICR (p. 24) mitigation measures were not strong enough and resulted in continued perverse incentives in the forest sector leading to unlawful activities such as willful setting of fires. According to the Bank team (January 24, 2020) the perverse incentives were the root cause of some fire setting practices, e.g., escapes from agricultural burning, setting fires to obtain salvage logging contracts, developing policies to manage abandoned agricultural land and pasture (to reduce the large areas of tall, cured grasses during the peak fire months). While there is some argument that the reforms were overly optimistic and did not get to the heart of the problem, the Bank did draw on analytical work to inform the design and some of the outcomes were the result of limited responsiveness on the behalf of the client.

In addition, while the project was approved in September 2012, it took over a year for the government to approve it (December 2013). Furthermore, the project's Results Framework had several shortcomings such as the lack of baselines and targets for the indicators.

Overall, we rate these as moderate shortcomings.

Quality-at-Entry Rating Moderately Satisfactory

b. Quality of supervision

According to the ICR (p. 29) the Bank conducted regular biannual supervision missions. The Bank collaborated with the government, the implementing agencies, and the clients in the region and conducted

several high-level technical meetings and field visits. The ICR (p. 26) stated that implementation issues were continuously brought to the attention of Bank management and effectively communicated to the implementing agencies and the Ministry of Finance (MoF).

The Bank restructured the project in December 2016. At the time of the project restructuring only 18% of the Bank financing was disbursed due to the FFA's rejecting the implementation of activities under Part A. The Bank addressed this bottleneck by following the request to limit the activities implemented by the FFA to the already signed and/or awarded contracts and by expanding the scope and coverage of Part B from 12 PAs to 25 PAs. Also, the Bank revised the Results Framework to add baselines and targets to the indicators and to reflect the change in scope. However, the ICR (p. 29) stated that the restructuring did not positively impact the achievement of the PDO. Also, the ICR (p. 27) stated that M&E data was not used to inform decision making and the project's M&E was consistently rated Unsatisfactory or Moderately Unsatisfactory in the ISRs due to poor reporting, limited utilization and reporting gaps.

According to the Bank team (January 24. 2020), the Bank addressed the low M&E rating by providing support during the missions and in between by country office staff. However, according to the ICR (p. 27) M&E continued to be a challenge throughout implementation.

Quality of Supervision Rating Moderately Satisfactory

Overall Bank Performance Rating Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The project's objective was clearly specified. The selected indicators encompassed all outcomes of the PDO statement. However, the project's theory of change was not sound and did not clearly reflect how project outputs were to result in the intended outcomes. The original Results Framework did not include baselines for any of the selected indicators. Also, none of the PDO indicators had a target. The ICR (p. 26) stated that the project had planned to collect baseline data through analysis and studies during the initial phase of project implementation. However, the analysis and studies ended up being conducted under Part B in the PA. While the intermediate results indicators included a target, they all lacked a baseline.

According to the PAD (p. 11) the implementing agencies, were to be responsible for reporting on project progress, with support from the PIU, in annual progress reports.

b. M&E Implementation

According to the ICR (p. 26) the project experienced challenges in regard to data availability and collection. Therefore, the project was restructured in December 2016 to revise the Results Framework. Indicators were modified to reflect the revised scope of the project, baselines and targets were added and

two indicators were dropped. However, the ICR (p. 26) stated that the project's M&E did not improve after project restructuring. For three out of six PDO indicators, and for seven out of ten intermediate outcome indicators no data was available, making the assessment of the project's progress towards the PDO challenging.

c. M&E Utilization

According to the ICR (p. 27) indicators were continuously used to identify implementation bottlenecks. However, several indicators' targets remained unreported in the last Implementation Status Report (ISR). While the project used reports from contractors and consultants to assess implementation progress in the field, regular, consistent and complete reports were never submitted. The ICR (p. 27) stated that M&E data was not used to inform decision making and the project's M&E was consistently rated Unsatisfactory or Moderately Unsatisfactory in the ISRs due to poor reporting, limited utilization and reporting gaps.

M&E Quality Rating

Negligible

10. Other Issues

a. Safeguards

The project was classified as category B and triggered the Bank's safeguard policies OP/BP 4.01 (Environmental Assessment), OP/BP 4.04 (Natural Habitats), OP/BP 4.36 (Forests), OP/BP 4.09 (Pest Management) and OP/BP 4.10 (Indigenous People). According to the ICR (p. 27) the project prepared an Environmental Management Plan Framework to guide Environmental and Social Impact Assessments of potential sub-projects. However, the planned construction activities did not take place and only technical assistance and purchasing of new equipment was financed. The project conducted social screening to assess any potential impacts such as indigenous people in the project regions. Also, a project grievance redress mechanism (GRM) was put in place. The ICR (p. 28) stated that there was no evidence of the GRM receiving or processing any complaints. The project complied with the Bank's safeguard policies.

b. Fiduciary Compliance

Financial Management:

According to the ICR (p. 28) the project's Financial Management (FM) arrangements were satisfactory throughout implementation. The FM procedures were reviewed on a periodic basis as part of the supervision missions. The PIU's FM system including accounting, internal controls and reporting, was consistently rated satisfactory by the Bank. Also, the PIU was adequately staffed and managed. Furthermore, the quarterly unaudited interim financial reports were submitted on time and accepted by the Bank. According to the Bank team (January 26, 2020) financial statements had a clean opinion.

Procurement:

According to the ICR (p. 28) at the beginning of project implementation the Bank provided training in procurement. However, during the Mid-Term Review several procurement related issues were identified. The project experienced significant delays in the approval of bidding documents and signing of already awarded contracts. The Bank identified several bottlenecks such as mixed commitment to the project goals, lack of understanding of the Bank's procurement rules, lack of communication between the implementing agencies and PIU staff, several layers of reviews, unclear responsibilities, and insufficient attention to project management. The ICR (p. 20) stated that by December 2015, 30 contracts were outstanding for a total value of approximately US\$22 million of which US\$11 million was awarded and read for signing. This resulted in six court cases being initiated. According to the Bank team (January 24, 2020) the Bank addressed these issues by flagging them to the CMU, reporting them in the ISRs, discussing them with the Implementing Agencies during the missions.

c. Unintended impacts (Positive or Negative)
NA

d. Other

11. Ratings			
Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Unsatisfactory	Unsatisfactory	
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	
Quality of M&E	Negligible	Negligible	
Quality of ICR		Substantial	

12. Lessons

The ICR (p. 30-31) included several lessons learned which were adapted by IEG:

• In order to ensure an effective forest fire response a mix of policy, institutional support and investments in the capacity on the ground is needed. Even though the design of this project entailed all these aspects, the activities were mainly reduced to investments in technical capacity and equipment. This resulted in limited project outcomes and an ongoing threat of catastrophic fires in the selected regions.

- Overly complex implementation arrangements with multiple implementing agencies
 working across several regions easily experience delays and lack of clarity in terms of
 responsibilities for end results. In this project, two different implementing agencies worked
 across five regions and 25 Protected Areas resulting in delays and lack of clarity over
 responsibility over end results and limited oversight from the implementing agencies'
 leadership. All these aspects had a negative impact on project outcomes.
- A combination of engaging with the private sector, cooperating across regions, and introducing technologies would allow for an effective forest sector development.
 These project regions benefitted from as systematic planning approach to solving complex issues of forest fire prevention, detection, and suppression through exposure to international expertise, innovative ideas, and technologies which otherwise would not be available through the normal budgeting processes.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR provides a good overview of project preparation and implementation. It includes a benefit-cost analysis and is concise, sufficiently candid and internally consistent. Also, the ICR provides useful lessons learned. However, the ICR includes only limited information on M&E and for the most part does not provide any targets for the outputs produced, making the assessment of project achievement problematic.

a. Quality of ICR Rating Substantial